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The Genus *Hydiorhrips* HOOD (Thysanoptera, Phlaeothripidae) from East Asia

Shûji OKAJIMA

Laboratory of Entomology, Tokyo University of Agriculture,
Sakuragaoka, Setagaya-ku, Tokyo, 156 Japan

Abstract The East Asian species of the phlaeothripid genus *Hydiorhrips* are studied. Six species are recognized, in which five species are new to science. They are: *Hydiorhrips brunneus* sp. nov., *H. hiromiae* sp. nov., *H. japonicus* OKAJIMA, *H. malayanus* sp. nov., *H. nirasawae* sp. nov. and *H. sulawesicus* sp. nov. A key is provided to these six species.

Key words: Thysanoptera; Phlaeothripidae; Hydiorhripini; *Hydiorhrips*; East Asia.

The species belong to the tribe Hydiorhripini have very small bodies which are usually less than 1 millimeter. Because of the size, the investigations of this group of animals may be quite insufficient at the present. In the genus *Hydiorhrips* HOOD, which was originally elected for *atomarius* from Florida, only four species have been known in the world. In which three species have been known from the New World (one from Florida and two from Brazil) and the remaining one from the Old World (from Japan). However, there are some series of specimens of this genus collected from the East Asia in the collection of the Laboratory of Entomology, Tokyo University of Agriculture. These specimens contain six distinct species in which five species are new to sciences. The present author is going to describe these five new species hereinafter with a key to six East Asian species.

The genus *Hydiorhrips* and its relatives constitute the tribe Hydiorhripini belongs to the subfamily Phlaeothripinae of the family phlaeothripidae. Recently, however, BHATTI (1992, 143) treated this group as a distinct family Hydiorhripidae, and the status of it is remain uncertain.

Abbreviations. The following abbreviations are used for the prothoracic setae: aa, anteroangulars; am, anteromarginals; ml, midlaterals; pa, posteroangulars; epim, epimerals.

Type depositary. All the holotypes and most of paratypes designated in this paper are preserved in the Laboratory of Entomology, Tokyo University of Agriculture.

Before going further, the author wishes to express his cordial thanks to the following colleagues: Dr. T. NONAKA, Miss H. URUSHIHARA, Miss S. NIRASAWA, Mr. T. ENOMOTO and Mr. M. HASEGAWA, for their kindness in offering

specimens. Miss URUSHIHARA drew some of the text figures.

Genus *Hydiorhrips* HOOD

Hydiorhrips HOOD, 1938, 414–415. Type species: *Hydiorhrips atomarius* HOOD, by monotypy.

Diagnosis. Body minute, feeble or robust, thickened dorsoventrally; head distinctly produced in front of eyes; postocular setae well developed, long and stout, seemingly strongly curved inward; antennae usually seven-segmented, due to morphological segments III and IV completely fused to one segment which is much larger than any of the other segments, segment VI and VII slender, stylus-like. Pronotum well developed, not separated from episternum, usually with a median transverse groove; am setae formed like as postoculars, aa, pa and epim usually strongly dilated apically, ml short and pointed; fore femora each with a stout spine at inner margin. Abdominal tergum I usually divided into some sclerites (cf. Fig. 16), anterior sclerite, a pair of lateral sclerites, median sclerite and posterior sclerite, in macropterae (true pelta consists of median and posterior sclerites), posterior sclerite divided into two plates (cf. Figs. 10, 11) or not (cf. Figs. 14, 16), anterior sclerite rarely divided into two plates (cf. Fig. 10), but the pelta usually undivided in micropterae (cf. Figs. 9, 15).

Hydiorhrips is closely related to the genera *Preeriella* HOOD, 1939, and *Machadonia* BOURNIER, 1965. From these two genera, it is easily distinguished by the not expanded postocular setae which are seemingly curved inward. An oriental genus *Crinitothrips* OKAJIMA, 1978, is also related, but it has unusually well developed posteromarginal prothoracic setae.

Key to East Asian Species

(The males of three new species, *hiromiae*, *malayanus* and *sulawesicus*, are unknown.)

1. Female2
- Male7
2. Posterior portion of metanotum smooth3
- Posterior portion of metanotum sculptured medially with longitudinal striae, reticles or wrinkles (cf. Figs. 17, 18)4
3. Pronotum almost as long as head (exclusive of preocular part) or a little shorter; metanotal anteromedian reticulation with internal wrinkles; posterior sclerite of pelta just divided into two plates, median sclerite rhombic, at least angulated posteriorly; antennal segment VII shorter than segment IV; usually macropterous*japonicus* OKAJIMA

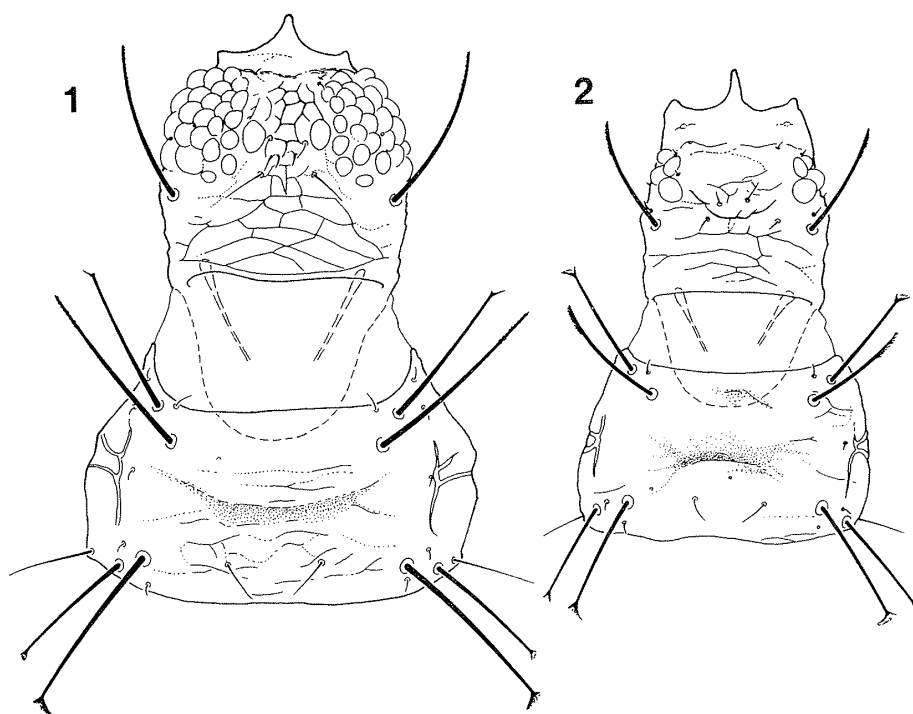
- Pronotum longer than head (Fig. 5); metanotal anteromedian reticulation without internal markings; posterior sclerite not divided (Fig. 14), median sclerite circular, at least rounded posteriorly; antennal segment VII almost as long as segment IV (Fig. 22); micropterous
.....*nirasawae* sp. nov.
- 4. Body yellowish brown to pale brown; antennal segment II yellow, contrast with brown segment III; posterior sclerite of pelta divided into two plates, well separated from each other, median sclerite reaching posterior margin5
- Body dark brown; antennal segment II dark brown, concolorous with segment III or a little paler; posterior sclerite of pelta not divided, often fused to median sclerite6
- 5. Posterior portion of metanotum sculptured with median longitudinal striae (Fig. 18); pronotum smooth anteromedially; postocellar setae well separated, their distance more than 10 μ m (Fig. 3)*hiromiae* sp. nov.
- Posterior portion of metanotum sculptured with fine wrinkles, the sculptured area forming a triangle; pronotum weakly sculptured anteromedially; postocellar setae close together, their distance less than 8 μ m (Fig. 4)*malayanus* sp. nov.
- 6. Metanotal reticulation or striation with internal markings; tube about 1.8 times as long as basal width*sulawesicus* sp. nov.
- Metanotal reticulation or striation without internal markings (Fig. 17); tube less than 1.4 times as long as basal width*brunneus* sp. nov.
- 7. Antennal segment II brown, almost concolorous with head, a little paler than segment III; metanotum sculptured with weak reticulation or striation*brunneus* sp. nov.
- Antennal segment II yellow, much paler than segment III and head; metanotum smooth8
- 8. Pronotum much longer than whole length of head (Fig. 6)
.....*nirasawae* sp. nov.
- Pronotum shorter than whole length of head*japonicus* OKAJIMA

Hydriothrips brunneus sp. nov.

(Figs. 1-2, 8-9, 17, 19-20)

Female (macroptera). More or less robust, uniformly dark brown; antennal segments I and II a little paler than the remaining segments, not yellowish; wings shaded with pale grey, major body setae yellowish.

Head (Fig. 1) broader than long (exclusive of preocular part), 1.18 times as broad as long in holotype. Antennae seven-segmented (Fig. 19) morphological segments III and IV fused completely; length/width of segments =



Figs. 1-2. *Hyidiothrips brunneus* sp. nov., head and prothorax. — 1, macropterous female; 2, micropterous male.

III 1.47, IV 1.12, V 1.85, VI 2.00, VII 4.00 in holotype.

Pronotum (Fig. 1) much shorter than whole length of head, 0.74 times as long as head in holotype; prothoracic aa, pa and epim foot-shaped, aa sometimes simply expanded. Mesonotum transversely striated, with reticulation posteromedially; metanotum (Fig. 17) reticulated anteromedially, longitudinally striated posteriorly at the middle, the reticulation and striation without internal markings, a pair of median setae situated just behind the middle of reticulated area. Forefemora each with a stout spine, situated at the middle of interior margin. Forewings each with 36 fringe hairs in holotype.

Abdominal tergum I (Fig. 8) distinct, weakly transversely striated, but anterior sclerite smooth; posterior sclerite not divided; median sclerite rounded posteriorly, often fused to posterior one, usually fused to anterior one. B1 setae on abdominal tergum IX much longer than B2. Tube short, 0.71–0.75 times as long as head (exclusive of preocular part), about 1.4 times as long as maximum width. Anal setae much longer than tube.

Measurements of holotype macropterous female in μm . Total distended body length 820. Head whole length 75, from anterior margin of eyes 61, width 72; eye length 36, width 25; distance between hind ocelli 13. Pronotum median length 55.5, width 105; forewing length 396. Pelta median length 34, posterior sclerite width 74. Tube length 45, basal width 32, apical width 18.5.

Antennal segments I to VII length (width) as follows: 13(19); 21(20); 39(26.5); 23(20.5); 24(13); 13(6.5); 16(4).

Length of setae. Postoculars 53–58. Prothoracic aa 47–48, am 53, pa 53–56, epim 40–42. Mesonotal laterals 24–27; metanotal medians 14–16; subbasal wings B1 39–40, B2 33–34, B3 34–37. B1 (B2) setae on tergum IX 69–71 (51–52). Anals 61–63.

Male (aptera). Colour very similar to that of macropterous female. Head (Fig. 2) comparatively flat, slightly depressed between eyes, dorsal surface reticulated; eyes reduced, each with four ommatidia; ocelli absent. Metanotum weakly sculptured medially. Pelta (Fig. 9) irregularly shaped, median sclerites fused to anterior and posterior ones.

Measurements of paratype apterous male in μm . Total distended body length 550. Head whole length 65, from anterior margin of eyes 42, width 54. Pronotum median length 47.5, width 79. Pelta median length 16, posterior sclerite width 58. Tube length 40, basal width 26.5, apical width 16. Antennal segments I to VII length (width) as follows: 13(18); 17(18.5); 31.5(22.5); 18(18.5); 19(13); 10.5(6.5); 15(3.5).

Length of setae. Postoculars about 35. Prothoracic aa 34–38, am 37–38, pa 38–40, epim 28–30. Mesonotal laterals 29–31; metanotal medians 11–13. B1 (B2) setae on tergum IX 45–49 (42). Anals about 40.

Holotype. ♀ (mac.), Japan, Ryukyu Is., Iriomote-jima Is., nr. Ohtomi, Nakama-gawa-rindou, on dead branches, 7-ix-1988, S. OKAJIMA leg.

Paratypes. Japan, the Ryukyus: 26 ♀ 2 ♂, collected with holotype; 1 ♀, data very similar to holotype, but on dead leaves, 8-ix-1988.

Non-paratypic material. Japan, the Ryukyus: 1 ♀, Amami-oshima Is., Uken-son, Fureainomori, on dead leaves and branches, 26-iii-1990, S. OKAJIMA leg.; 1 ♀, Ishigaki-jima Is., nr. Nagura, Takeda, on dead branches, 11-iii-1990, T. NONAKA leg. Taiwan: 1 ♀, Nantou Hsien, Nanshanchi, on dead *Palmae* fronds on ground, 29-viii-1993, S. OKAJIMA leg.

Distributions. Japan (Amami-oshima Is., Ishigaki-jima Is. and Iriomote-jima Is.); Taiwan.

Remarks. This species is most similar to another new species described below under the name of *sulawesicus* in the somewhat robust body, uniformly dark brown antennae and the short tube. However, it can be distinguished by the key above.

Three females listed above as non-paratypic material have something different in the shape of pelta and length of tube, but they share most structures with *brunneus*.

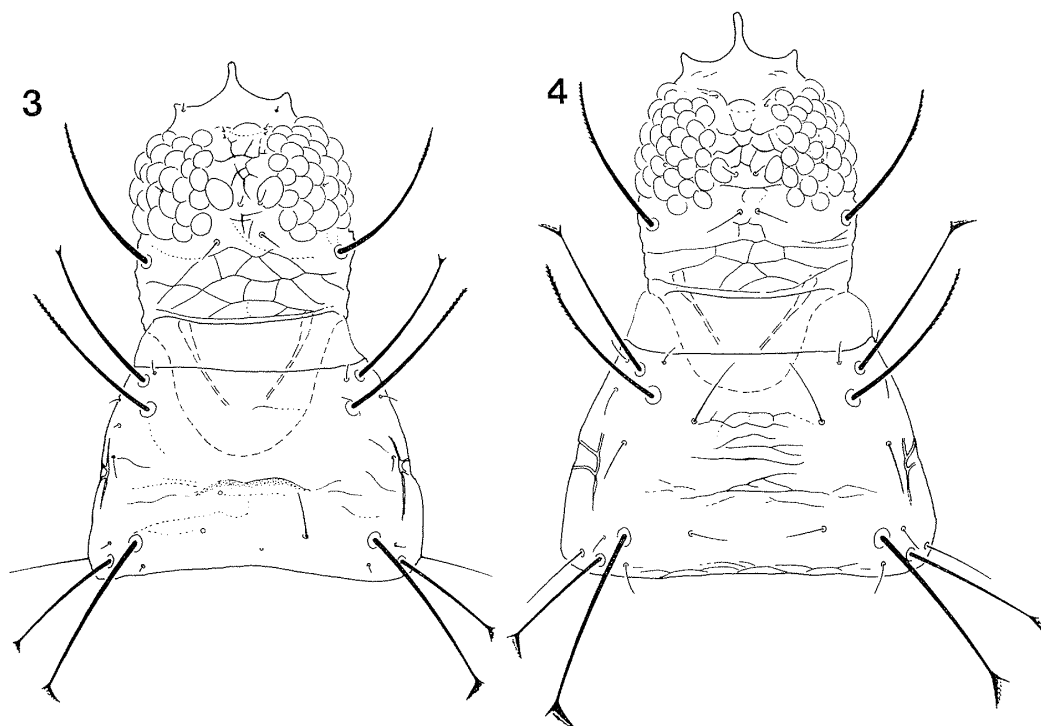
Hydithrips hiromiae sp. nov.

(Figs. 3, 10, 18, 21)

Female (macroptera). More or less feeble, uniformly pale yellowish brown; head and antennal segments III to VII somewhat darker; antennal segments I and II yellowish; tibiae yellow with brownish extreme bases, tarsi yellowish; wings shaded with pale brown, major setae yellowish.

Head (Fig. 3) almost as long as broad or a little broader (exclusive of preocular part), 0.9 times as long as broad in holotype. Antennae (Fig. 21) seven-segmented, morphological segments III and IV fused completely, without suture between them; length/width of segments = III 1.56, IV 1.32, V 2.00, VI 2.06, VII 3.33 in holotype.

Pronotum (Fig. 3) a little shorter than head (exclusive of preocular part), 0.91 times as long as head in holotype; prothoracic pa asymmetrical dilated, foot-shaped, aa and epim simply expanded or weakly foot-shaped. Mesonotum transversely striated anteriorly, almost smooth posteriorly, but with reticulation near posterior margin; metanotum (Fig. 18) reticulated anteromedially, the reticulation with internal markings, weakly longitudinally striated posteriorly at the middle, the striation without internal markings, a pair of median setae situated just behind the middle of reticulated area. Forefemora each with a



Figs. 3-4. *Hydithrips* species, head and prothorax, macropterous female. — 3, *hiromiae* sp. nov.; 4, *malayanus* sp. nov.

short spine, situated between middle and apex on interior margin. Forewings each with 36–37 fringe hairs in holotype.

Abdominal tergum I (Fig. 10) weak, both of anterior and posterior sclerites well divided, median sclerite isolated, reaching posterior margin. B1 setae on abdominal tergum IX a little longer than B2. Tube about 0.9 times as long as head (exclusive of preocular part), 1.9 times as long as maximum width. Anal setae longer than tube.

Measurements of holotype macropterous female in μm . Total distended body length about 850. Head whole length 77, from anterior margin of eyes 61, width 63; eye length 37, width 25; distance between hind ocelli 8. Pronotum median length 55.5, width 87; forewing length 393. Pelta median sclerite length 26.5, posterior sclerite width 80. Tube length 55, basal width 29, apical width 14.5. Antennal segments I to VII length (width) as follows: 14.5(18.5); 19(18); 36(23.5); 22.5(17); 23(11.5); 13(6.3); 14(4.2).

Length of setae. Postoculars?. Prothoracic aa 45–48, am about 50, pa 53–54, epim 37–40. Mesonotal laterals 25–27; metanotal medians 16–18; subbasal wings B1 40, B2 37, B3 36. Setae on tergum IX: B1 54–56, B2 50–53. Anals 58–60.

Male. Unknown.

Holotype. ♀ (mac.), Japan, Ryukyu Isls., Iriomote-jima Is., nr. Ohtomi, Nakamagawa-rindou, on dead leaves on the ground, 3-ix-1988, S. OKAJIMA leg.

Distributions. Japan (Iriomote-jima Is.).

Remarks. This species is somewhat similar to *japonicus*, but it can be distinguished from the latter by the following features: antennal segment VII shorter; mesonotal striation finer; metanotal median setae situated just behind the middle of reticulated area; posterior portion of metanotum with longitudinal striae at middle; forewing with 36–37 fringe hairs; B1 setae on abdominal tergum IX longer than B2; tube shorter than head.

The specific name is dedicated to Miss Hiromi URUSHIHARA of Omogo Mountain Museum, Ehime, for her warmhearted help in various ways.

Hydiorhrips japonicus OKAJIMA

(Figs. 12–13)

Hydiorhrips japonicus OKAJIMA, 1977: 214–218.

The holotype female has the median sclerite of pelta not reaching posterior margin and pointed posteriorly, and has the posterior sclerite just divided into two lateral plates. It is shared these structures of pelta with most females collected from Honshu, the mainland of Japan. However, the females collected from Mikura-jima Island, listed below have peltae something different from

that of holotype. The median sclerite is reaching posterior margin and do not pointed posteriorly, and the posterior sclerite is distinctly divided into two plates (Fig. 13). Moreover, a female collected from Ishigaki-jima Island also listed below has the median sclerite not reaching posterior margin and rounded posteriorly, and has the posterior sclerite not divided (Fig. 12). It seems that the material from Honshu is intermediate between these two populations in the shape of pelta. Moreover, they could not differ satisfactorily in any other structures at the present time.

Material examined. Japan, Kanagawa-ken, Zushi-shi, Jinmuji-forest, in leaf-litter: Holotype ♀ and 14 ♀ 2♂ paratypes 15-x-1975, S. OKAJIMA leg.; 1 ♀ 2♂ paratypes, 4-x-1975, S. OKAJIMA leg.; 12 ♀ 3♂, 6-iii-1983, S. OKAJIMA leg.; 2 ♀, 18-xii-1990, H. URUSHIHARA, S. OKAJIMA et T. NONAKA leg.; 1 ♀, 18-ii-1991, H. URUSHIHARA et S. OKAJIMA leg.; 4 ♀ 2♂, 16-i-1992, H. URUSHIHARA et S. OKAJIMA leg. Japan: 5 ♀ 6♂, Ibaraki-ken, Mt. Tsukubasan, nr. Yakuouin, in leaf litter, 14-xi-1987, T. ENOMOTO leg.; 8 ♀ 1♂, Izu Isls., Mikura-jima Is., in leaf-litter, 10-vi-1983, M. HASEGAWA leg.: 1 ♀, Okinawa-ken, Ishigaki-jima Is., Mt. Banse-dake, in leaf-litter, 4-x-1989, T. NONAKA leg.

Distribution. Japan (Honshu, ?Mikura-jima Is. and ?Ishigaki-jima Is.)

Hydiorhrips malayanus sp. nov.

(Figs. 4, 11)

Female (macroptera). More or less feeble, uniformly pale yellowish brown to brown: antennal segments I and II yellowish, at least paler than segment III; foretibiae yellow, mid- and hindtibiae yellow with extreme bases shaded; wings shaded with pale brown, major setae yellowish.

Head (Fig. 4) a little broader than long (exclusive of preocular part), 1.08 times as broad as long in holotype, postocellar setae close together, their distance less than 5 µm in holotype, 7 µm in paratype. Antennae seven-segmented, morphological segments III and IV completely fused, without suture between them; segments IV and V subequal in length; segment VII a little longer than segment VI; length/width=III 1.64, IV 1.31, V 1.83, VI 2.80, VII 4.57 in holotype.

Pronotum (Fig. 4) a little longer than head (exclusive of preocular part), 1.05 times as long as head in holotype, weakly sculptured at anteromedian portion and along posterior margin; median transverse groove weak, with some striae; prothoracic aa, pa and epim asymmetrical dilated at apices, foot-like. Mesonotum finely striated anteriorly, reticulated along posterior margin; metanotum reticulated anteromedially, the reticles with internal markings of fine wrinkles, with a triangular area sculptured with fine wrinkles at behind the reticulated area. Forefemora with a stout spine, situated at anterior third of

interior margin. forewings each with 35–37 fringe hairs in holotype.

Abdominal tergum I (Fig. 11) weak, almost smooth, median sclerite enlarged, reaching posterior margin, fused to anterior sclerite; posterior sclerite divided into two plates, well separated from each other. Anterior portion of tergum II weakly sculptured; B1 and B2 setae on tergum IX subequal in length. Tube shorter than head (exclusive of preocular part), 0.83 times as long as head in holotype, about 1.8 times as long as basal width. Anal setae almost as long as tube.

Measurements of holotype macropterous female in μm . Total distended body length about 900. Head whole length 82, from anterior margin of eyes 60, width 65; eye length 36, width 24; distance between hind ocelli 9. Pronotum median length 63, width 98; forewing length 405. Pelta median length 37, posterior sclerite width 86. Tube length 50, basal width 27.5, apical width 15. Antennal segments I to VII length (width) as follows: 15(17); 19(17.5); 37(22.5); 23(17.5); 22(12); 14(5); 16(3.5).

Length of setae. Postoculars ?about 50. Prothoracic aa 50–53, am 52, pa 60–62, epim 40–45. Mesonotal laterals 27–28; metanotal medians about 20; subbasal wings B1 35–40, B2 35–38, B3?. B1 (B2) on tergum IX 50–52 (45–50). Anals about 50.

Male. Unknown.

Holotype. ♀ (mac.), West Malaysia: Tapah, on dead leaves and branches, 16-ix-1990, T. NONAKA et S. OKAJIMA leg.

Paratype. West Malaysia: 1 ♀, collected with holotype.

Distribution. West Malaysia.

Remarks. This species is most similar to another new species described above under the name of *hiromiae* in the coloration and shape of pelta. However, it can be distinguished by the key above.

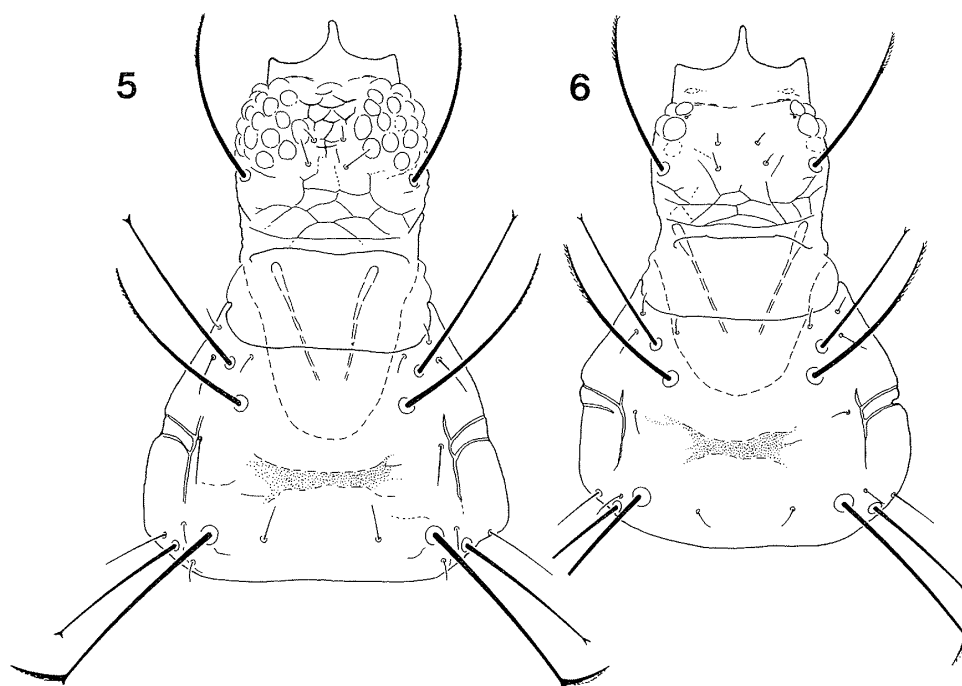
Hyidiuthrips nirasawae sp. nov.

(Figs. 5–6, 14–15, 22)

Female (microptera). More or less robust, uniformly dark brown, posterior portion of abdominal sternum VIII paler; antennal segment II yellowish, the remaining segments dark brown; foretibiae and forecoxae a little paler, all tarsi yellowish; major body setae yellowish.

Head (Fig. 5) broader than long (exclusive of preocular part), 1.1 times as broad as long in holotype; ocelli present. Antennae (Fig. 22) seven-segmented, morphological segments III and IV fused completely, but with weak suture between them; segment VII much longer than segment VI; length/width of segments = III 1.65, IV 1.25, V 2.00, VI 2.08, VII 5.00 in holotype.

Prothorax (Fig. 5) well developed, median length of pronotum almost as



Figs. 5-6. *Hyidlothrips nirasawae* sp. nov., head and prothorax. — 5, micropterous female; 6, micropterous male.

long as or longer than whole length of head, 1.03 times as long as head in holotype; prothoracic pa foot-shaped, aa and epim simply expanded, am curved like as postoculars. Mesonotum transversely striated anteriorly, smooth medially and posteriorly; metanotum reticulated anteromedially, smooth posteriorly. Forefemora each with a spine, situated at anterior third of interior margin. Forewings less than $30\mu\text{m}$, with three stout setae (subbasal wing setae), foot-shaped.

Abdominal tergum I (Fig. 14) distinct, with weak reticulation; median sclerite circular, barely separated from anterior sclerite or irregularly fused to it, posterior sclerite not divided. B1 setae on abdominal tergum IX stouter than B2, but subequal in length. Tube longer than head (exclusive of preocular part) 1.24 times as long as head in holotype, about twice as long as basal width. Anal setae 1.09-1.16 times as long as tube.

Measurements of holotype micropterous female in μm . Total distended body length 875. Head whole length 65, from anterior margin of eyes 50, width 55; eye length 27, width 18; distance between hind ocelli about 10. Pronotum median length 67, width 93. Pelta median length 30, posterior sclerite width 80. Tube length 62, basal width 30, apical width 17. Antennal segments I to VII length (width) as follows: 15(17); 20(18); 38(23); 20(16); 24(12); 12.5(6); 20(4).

Length of setae. Postoculars about 50. Prothoracic aa 50-51, am

60–62, pa 63–65, epim 45–47. Mesonotal laterals 25–26; metanotal medians 12–15; subbasal wings B1 42–43, B2 35–38, B3 43–44. B1 (B2) on tergum IX 62–65 (60–62). Anals 68–72.

Male (microptera). Colour similar to that of micropterous female, but a little paler in head, antennal segment I, all tibiae and abdominal segment IX. Head (Fig. 6) much broader than long (excluding preocular part); dorsal surface weakly reticulated posteriorly, smooth anteriorly; eyes reduced, each with three ommatidia; ocelli absent. Meso- and metanotum smooth. Forewings less than 20 μm , with only two long setae (subbasal wing setae). Pelta (Fig. 15) shaped irregularly, median sclerite not well defined, fused to anterior and posterior sclerites.

Measurements of paratype micropterous male in μm . Total distended body length 625. Head whole length 47, from anterior margin of eyes 34, width 45. Pronotum median length 58, width 77. Pelta median length 18, posterior sclerite width 65. Tube length 45, basal width 25, apical width 15. Antennal segments I to VII length (width) as follows: 13(16); 15(17); 31(21); 15(15); 20(11.5); 10(6); 17(4).

Length of setae. Postoculars ?35. Prothoracic aa 42–45, am about 50, pa 50–55, epim 35–38. Mesonotal laterals about 20; metanotal medians less than 7; subbasal wings B1 about 30, B2 37–40. B1 (B2) setae on tergum IX about 50 (48–50). Anals 62–63.

Holotype. ♀ (mic.), Japan: Okinawa-ken, Okinawa-hontou Is., Yona, in leaf-litter, 21-vi-1992, S. NIRASAWA leg.

Paratypes. Japan: 21 ♀ 22 ♂, collected with holotype.

Distribution. Japan (Okinawa-hontou Island).

Remarks. This species is more or less similar to *japonicus* in the proportion of head and tube, and condition of prothoracic setal apices, but it is easily distinguished by the robuster and darker body, enlarged prothorax and long seventh antennal segment.

The specific name is dedicated to the collector, Miss Sachiyo NIRASAWA of Tokyo University of Agriculture.

Hydiorhrips sulawesicus sp. nov.

(Figs. 7, 16, 23)

Female (macroptera). More or less robust, uniformly brown to dark brown, darkest in head and antennae; antennae uniformly dark brown; wings shaded with pale brown, major setae yellowish.

Head (Fig. 7) almost as long as broad (exclusive of preocular part), 0.97 times as long as broad in holotype. Antennae (Fig. 23) seven-segmented, morphological segments III and IV completely fused, without suture between

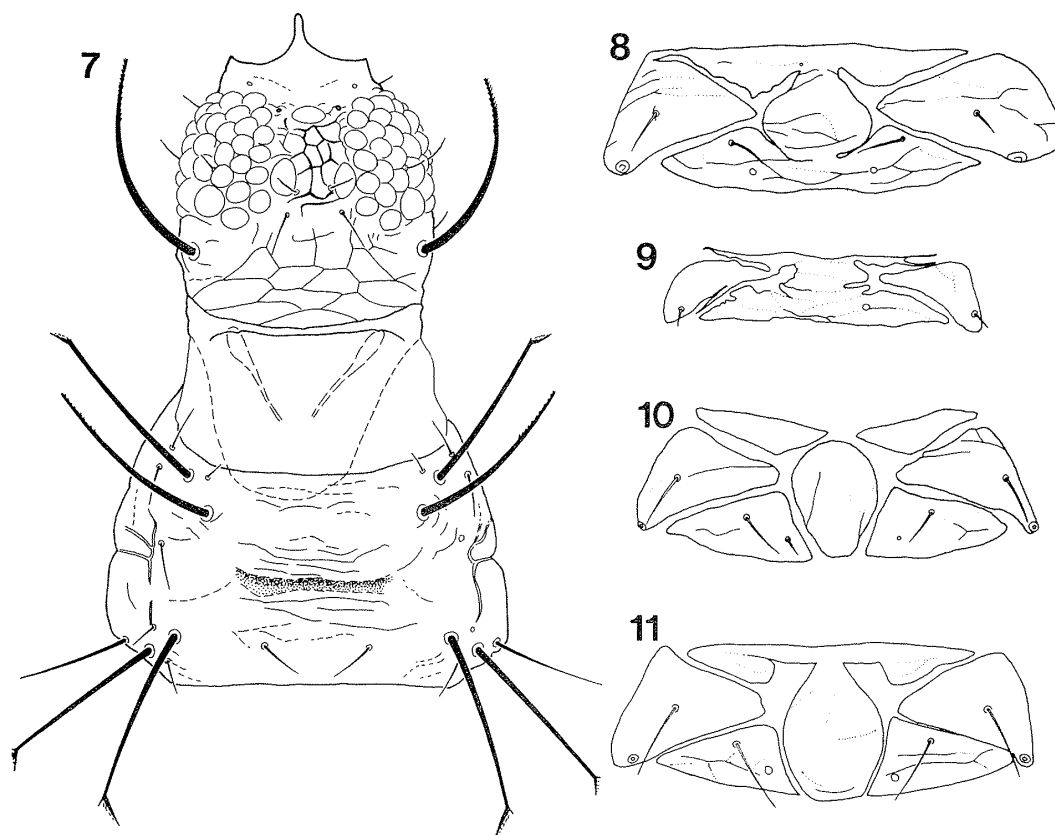


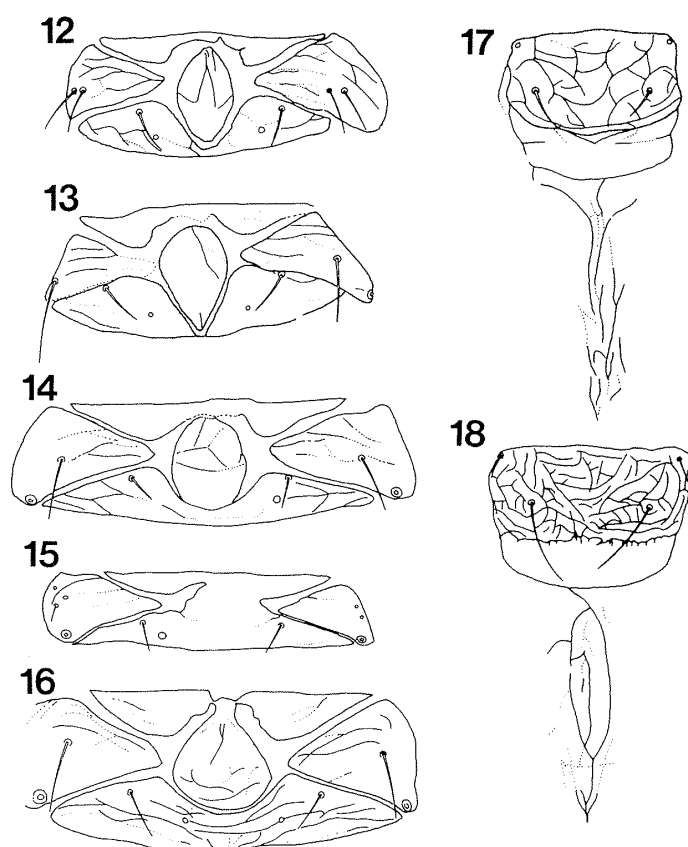
Fig. 7. *Hyidlothrips sulawesicus* sp. nov., head and prothorax, macropterous female.

Figs. 8-11. *Hyidlothrips* species, pelta. — 8, *brunneus* sp. nov., macropterous female; 9, *brunneus* sp. nov., micropterous male; 10, *hiromiae* sp. nov., macropterous female; 11, *malayanus* sp. nov., macropterous female.

them; segments VI and VII subequal in length; length/width of segments = III 1.56, IV 1.47, V 2.04, VI 2.46, VII 4.25.

Pronotum (Fig. 7) shorter than head (exclusive of preocular part), 0.85 times as long as head in holotype; prothoracic aa, pa and epim foot-shaped, but aa and epim dilated weaker than pa. Mesonotum transversely striated with fine striae at anterior portion, reticulated posteromedially; metanotum reticulated anteromedially, longitudinally reticulated posteromedially, the reticulation with internal markings of dots or wrinkles. Forefemora each with a stout spine, situated just before the middle of interior margin. Forewings each with 39-40 fringe hairs.

Abdominal tergum I (Fig. 16) well defined, median sclerite circular, fused to anterior sclerite, weakly reticulated, posterior sclerite not divided, with transversely reticulated with fine reticles. Anterior portions of abdominal terga II to VII very weakly reticulated; B1 setae on tergum IX longer than B2. Tube 0.85 times as long as head (exclusive of preocular part), about 1.8 times as long as basal width. Anal setae longer than tube.



Figs. 12–16. *Hydiorhrips* species, tergum I. — 12, ?*japonicus* from Ishigaki-jima Is.; 13, ?*japonicus* from Mikura-jima Is.; 14, *nirasawae* sp. nov., micropterous female; 15, *nirasawae* sp. nov., micropterous male; 16, *sulawesicus* sp. nov., macropterous female. Figs. 17–18. *Hydiorhrips* species, metanotum. — 17, *brunneus* sp. nov., macropterous female; 18, *hiromiae* sp. nov., macropterous female.

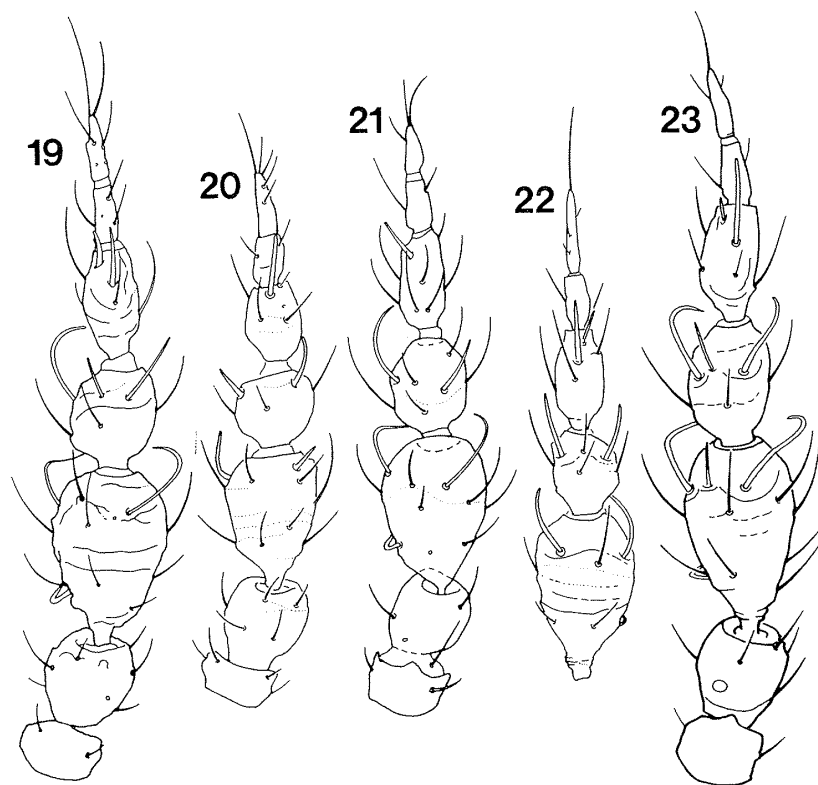
Measurements of holotype macropterous female in μm . Total distended body length 970. Head whole length 90, from anterior margin of eyes 71, width 73; eye length 40. Pronotum median length 60, width 108; forewing length 460. Pelta median length 37, posterior sclerite width 83. Tube length 60, basal width 33, apical width 18. Antennal segments I to VIII length (width) as follows: 15(20); 24(21); 42(27); 28(19); 27.5(13.5); 16(6.5); 17(4).

Length of setae. Postoculars about 60. Prothoracic aa 55–56, am 55–57, pa 65–67, epim 50–53. Mesonotal laterals 27–28; metanotal medians 17–19; subbasal wings B1 45, B2 about 40, B3 40–43. B1 (B2) on tergum IX 70–72 (64–66); anals 67.

Male. Unknown.

Holotype. ♀ (mac.), Indonesia: South Sulawesi, Karaenta Forest Res., Maros to Camba, alt. about 400 m, on dead *Palmae* fronds, 6-viii-1984, S. OKAJIMA leg.

Distribution. Indonesia (Sulawesi).



Figs. 19–23. *Hyidiotrips* species, antenna. — 19, *brunneus* sp. nov., macropterous female; 20, *brunneus* sp. nov., micropterous male; 21, *hiromiae* sp. nov., macropterous female; 22, *nirasawae* sp. nov., macropterous female; 23, *sulawesicus* sp. nov., macropterous female.

Remarks. This species is most similar to another new species described above under the name of *brunneus* in the coloration and the shape of pelta. However, it can be distinguished by the key above.

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